

REMARKS

In the Office Action Examiner Hook has rejected the claims under 35 USC 112 and this rejection is certainly understandable since the claims depended from Claim 1 which had been cancelled. The Examiner wisely treated the claims as being dependent from Claim 2. The application is formally corrected herein so that Claim 2 is now an independent claim with Claims 3 through 11 and 16 depending from it. Claims 12, 13 and 14 are independent claims. Claim 12 is an independent apparatus claim whereas Claims 13 and 14 and dependent Claim 15 are method claims.

In the 112 rejection, Examiner Hook noted inconsistencies in the structure contained in Claim 12. Claim 12 has been materially amended to hopefully delete all such inconsistencies and make it conform to Claim 2 from which it depends.

Most of the claim in the case, that is, Claims 2-8 and 11-14 have been rejected under 35 USC 102(b) as being unpatentable over the previously issued patent to Campbell. Further, Claims 9, 10, 15 and 16 have been rejected under 35 USC 103(a) as being unpatentable over Campbell in view of Early. Reconsideration of these rejections is requested in view of the amendments to the claims herein. It is believed that the claims as amended clearly define over the patent to Campbell and further define over any possible combination of Campbell and Early.

The control system in Campbell, as described and shown in Figure 8, has a “high pressure line connected to the ports of a solenoid valve 198 and thence through a normally closed solenoid valve 200” (See Column 9, lines 19-22). Further, Campbell states that “During operation, pump 36 and solenoid valve 200 are activated by a remote control switch (not shown) to initiate a gripping and sealing action. Pressurized hydraulic fluid flows through check valve 192, through solenoid valves 198 and through the one-way check valve of the normally closed solenoid valve 200 and into the high pressure side of the cylinder . . .” (See Column 9, lines 28-34). Thereafter, “When this limit

has been reached, the pump 36 is turned off and when the opposite action is to take effect, the remote control switch opens the solenoid valve 200, activates pump 36 and reverses the solenoid valve 198 so that hydraulic fluid can drain from the high pressure side of cylinder 70 . . .” (See Column 9, lines 40-45). This is assisted by activation of the pump which then will add fluid to the opposite side of the piston in the hydraulic cylinder. Further, “An overpressure condition is avoided by providing a relief valve 190 in the system.” (See Column 9, lines 9-11).

This system is a totally different system than the one defined in the present claims.

First, in the present invention there is a fluid line between the hydraulic piston and the source of hydraulic fluid and this fluid line comprises two parallel lines. A pump is arranged in one of these parallel lines and there is a control element with a neutral open position in the other parallel line. Thus, there is an open line between the source of hydraulic fluid and the piston in a neutral state of the system, so that the side of the piston pressurized when the system is activated gradually will be depressurized in a neutral state of the system. This concept is not taught by Campbell.

In Campbell the fluid added to the hydraulic piston by the pump will be closed within the hydraulic piston by the solenoid valve 200, which has a normally closed position. One cannot decrease the pressure within the high pressure side of the piston without having to activate at least one valve. In fact, in Campbell two valves 198, 200 have to be positively activated. In contradiction to this the present invention will allow a release of the pressure within the hydraulic cylinder without an active activation of any elements. In that sense the present invention gives flexibility and security which is not present or even discussed or indicated in Campbell. Such a flexibility or security is vital for a plug that could be positioned in a pipeline for several years and the need arises to release the plug even when there is no energy left in the plug and without having to activate any valves in relation to the hydraulic cylinder. In Campbell, it would be necessary to activate the valve 200 and

valve 198 to release pressure at a high side of the hydraulic cylinder to unseat the plug. With a system according to the present invention activation of valves or the energy to do this is not required since the pressure within the high pressure side of the hydraulic cylinder over time will be equalized with the pressure within the source of hydraulic fluid, due to the neutrally open control element in the line in parallel to the pump. The plug, according to the invention, can be released without activation of any valves and also without energy being required within or added to the plug according to the invention.

There are several ways this will work. One is to have the pump running to keep a given pressure within the hydraulic piston until the plug needs to be released and then cut the power and allow the pressure to be released. Thereby no positive activation of any elements within the plug is required. Another possibility is to have a plug which is self-locking when there is a pressure difference across the plug, and then set the plug with actuation of the pump and possibly a valve as the control element, and thereafter creating a pressure differential across the plug, and then stopping the pump and letting the valve go to its neutral position, and thereby relieving the pressure within the hydraulic cylinder, and then when the plug needs to be unset, the pressure differential across the plug without any positive activation of element within the plug related to the hydraulic piston. In this last embodiment the control element may also be an open orifice, which is always open even during the setting of the plug in which case the pump will both deliver fluid to the hydraulic cylinder and also fluid which will escape through the open orifice when the pump is running. In such a solution the orifice will normally allow much less fluid to escape than the capacity of the pump.

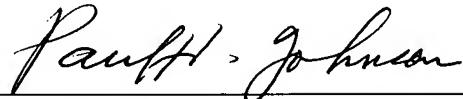
Neither of the other publications describes a control system as defined in the claims of this application. Early describes a system with a dump valve for the hydraulic cylinder which has to be activated to release the plug, a system that is opposite to the one defined in the present application.

Neither of the prior art references cited discuss the solution achieved by the present invention nor gives the skilled person any hints or indication of a solution as defined in the present independent claims.

A serious effort has been made to respond to each of the objections and rejections by Examiner Hook so as to hopefully place the application in condition for allowance which is respectfully requested.

Should any additional amendments be necessary to place the application in condition for a Notice of Allowance, Examiner Hook is invited to call the undersigned at the below noted telephone number.

Respectfully submitted,



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